

WEEKEND JOURNAL.

GEARING UP

Smells Like Team Spirit

Coconuts, crab shells are latest in anti-odor sports technology

BY REED ALBERGOTTI

ATHLETES HAVE EMBRACED the moisture-wicking properties of synthetic T-shirts and other workout wear. But many athletes—and those who love them—often discover an unpleasant feature of these microfiber garments: They smell bad.

Sales of synthetic “base layers,” as retailers call long underwear these days, have helped pump up sales of athletic apparel 11% to an estimated \$15.2 billion in 2007, far outpacing growth of apparel overall, according to market-research company NPD Group. But few can deny that these garments, in action, are like Petri dishes, incubating odor-causing bacteria. And they often hold on to the bacteria through a wash cycle, leaving some of it to bloom again, when the next workout begins.



Outdoor apparel makers began addressing the problem back in the 1990s. Among the earliest was Polartec, of Lawrence, Mass., which in 1991 began spraying synthetic-fiber underwear with Tryclosan, an ingredient that has

been used in antibacterial soap. More recently, Polartec and others have introduced fabrics treated with silver, whose bacteria-killing properties have given it wide use in medical and military applications. Please turn to page W7

GEARING UP

Smells Like Team Spirit

Continued from page W1 markets.

But makers of consumer textiles and apparel have begun looking beyond metal for odor-fighting tools, partly because of environmental concerns over metal-treated fabrics. Specifically, environmentalists worry that silver runoff during manufacturing and household laundry cycles will contaminate groundwater. Others worry that widespread use of antimicrobial fabrics will encourage super-resistant germ strains.

A NEW GENERATION of fabric treatments make use of organic-based sources. Some rely on activated carbon, which traps odor during wear and releases it during a wash. Closely held Cocona, of Boulder, Colo., uses carbon derived from coconut shells for its Cocona odor-resisting fabric. Merrell, a unit of Wolverine World Wide, is using Cocona for some of its new line of Sonic base layers for men and women launching in 2008 at prices ranging from \$35 to \$65. Arc'teryx Equipment, a Vancouver climbing-gear company, lines the inside of some of its base layers with fabric containing carbon from bamboo charcoal. The Arc'teryx Accelero men's zip pullover retails for \$98 at mountaingear.com.

Crab shells are a source of chitosan, a substance derived from crustacean shells that companies including Patagonia, of Ventura, Calif., are using in anti-odor fabrics. Last year, Patagonia introduced odor-controlling base layers made of Capilene fabric, using chitosan-based “Gladiodor” technology. Patagonia's Capilene 3 leggings for women, for use in cold weather, sell for \$44 at patagonia.com.

Beyond workout clothes, Merrell is putting odor-fighting sock liners and sole coatings on shoes, including its new Siren line of women's multisport shoes (priced at \$80 to \$100, depending on the fabric). And one of the new fabrics, Visa Endurance, from textile giant Milliken, is showing up in quick-drying “travel underwear” sold by retailer Magellan's International, of Santa Barbara, Calif. “For extended flights and days when you can't change clothes,” the retailer's Web site says, the undershirts retail for \$24, boxers for \$19.50 and briefs for \$16.50 at magellans.com.

Other apparel sellers promote merino wool as an alternative to synthetic athletic wear, and with inherent odor-control properties to boot. It generally costs more than synthetics, how-



ARSENAL OF ODOR EATERS

Options range from silver ions to crab shells.

- Silver** Ions from silver yarns woven into synthetic microfiber apparel kill odor-causing bacteria.
- Bamboo** Arc'teryx and other companies add bamboo charcoal to base layers to absorb bacteria and release it when laundered.
- Coconut** Same principle as bamboo charcoal, only it uses coconut shells. Cocona fabric also affords UV protection, according to Cocona Inc.'s Web site.
- Crab Shells** An amino-acid derivative is found in “Gladiodor,” the “environmentally safe” odor-fighter in Patagonia's Capilene base layers; it is effective for 50 washings, Patagonia says.
- Merino Wool** Retailers promote it as a natural odor fighter that retains its effectiveness through the life of the product.

ever. Ixex Outdoor Clothing, of Woodstock, Vt., sells wool and wool-blend apparel for skiing and cycling, including three-quarter-length wool-blend cycling “knickers” for \$120 and short-sleeve zip jerseys for \$125, at www.ixexwear.com.

Some textile makers promote their treatments as if they eliminate all bacteria permanently. “No bacteria. No Smell. Hooray for Technology,” Milliken says on the Visa Endurance Web site.

“That is impossible” says Gang Sun, a textile researcher at the University of California, Davis. He says the new fabrics can't completely eliminate odor; the best they can do is limit the range in which odor travels. As technology improves, the bubble of odor around clothes shrinks.

SOME OF THE NEW TREATMENTS lose their effectiveness over time. Patagonia says its crab-shell treatment is good for 50 washes. Cocona and Arc'teryx say theirs last indefinitely.

Moisture-wicking microfibers are quick-drying and lightweight, meaning they tend to be better than older synthetics at controlling undesirable scents because bacteria have less time to multiply. Still, for outdoor winter workouts, many athletes prefer wearing many light layers, a practice that encourages extra perspiration and bacterial growth. And once a Lycra or nylon item acquires a strong smell, there may be no turning back.

Robert Dill says he felt as if he were stuck in a crowded locker room when he waited at the starting line of the ING New York City Marathon in November, surrounded by runners in their training shirts, skin-tight leggings and shorts. “You're, like, ‘Whoa, he stinks!’” the 40-year-old New Jersey biology professor recalls.

Some people think washing clothes in hot water and detergent immediately after working out is just as effective as the new treatments at killing bacteria and eliminating smell. “Just don't throw it in the hamper,” says Kay Obendorf, a textile chemist at Cornell University. The sooner clothes are washed, the better, because bacteria begins to multiply after a few hours.

Eastern Mountain Sports, the Peterborough, N.H.-based retailer, says in response to customer requests it will feature “Microbe Shield,” a bacteria- and fungus-fighting chemical fabric finish from Aegis Environments, of Midland, Mich., on most of its base layers starting this spring. The treatment adds only 25 cents to the cost of each garment, says Will Manzer, EMS's chief executive.

Yet Mr. Manzer says many topical fabric treatments don't live up to their hype. He says he is weighing nontechnology approaches, such as offering laundry tips for keeping microfiber workout clothes fresh. “The more bells and whistles you throw at a customer, the more confused he gets,” Mr. Manzer says.

OUTFITTED

Base Layers to Be Seen In

Responding to customer demand, outdoor clothing companies are adding odor-fighting features to moisture-wicking base layers.



PATAGONIA CAPILENE 3 WOMEN'S ZIP-NECK, \$50.00
A base layer for moderate exertion in cold weather, it features the “Gladiodor” technology derived from crab shells. (www.patagonia.com)



ARC'TERYX ACCELERO PULLOVER, \$98.95
A base layer or a stand-alone, it puts a layer of bamboo charcoal next to skin. (www.backcountry.com)



CW-X INSULATOR STABILIX TIGHTS, \$115
These bottoms have silver ions woven in and extra compression support at the knees and lower back. (www.cw-x.com)



ICEBREAKER ALTITUDE ZIP, \$109.99
Icebreaker says this 100% merino wool pullover “can be worn for continuous use without washing and remain odor free.” (www.icebreaker.com)



MERRELL SIREN SPORT, \$80
This multisport shoe for women has an antimicrobial lining from Aegis to help protect feet. (www.merrell.com)